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FIFTH ANNUAL REPORT
OF
THE TRUSTEES
OF THE
MASSACHUSETTS
STATE SANATORIUM
AT RUTLAND.

SEPTEMBER 30, 1901.



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OF THE

MASSACHUSETTS STATE SANATORIUM.

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JOHN C. HAMMOND,	NORTHAMPTON.
A. W. ESLEECK,	HOLYOKE.

Examining and Visiting Physicians.

VINCENT Y. BOWDITCH, M.D.,	BOSTON.
HERBERT C. CLAPP, M.D.,	BOSTON.

Resident Officers.

WALTER J. MARCLEY, M.D.,	<i>Superintendent and Treasurer.</i>
MARY E. THRASHER, . . .	<i>Matron and Superintendent of Nurses.</i>
HENRY B. DUNHAM, M.D., .	<i>Assistant Physician.</i>
GEORGE N. LAPHAM, M.D., .	<i>Assistant Physician.</i>
WILLIAM F. MOORE, . . .	<i>Chief Engineer.</i>
CHARLES E. CARROLL, . . .	<i>Book-keeper.</i>
FREDERICK H. DRURY, . . .	<i>Supervisor.</i>

Commonwealth of Massachusetts.

REPORT OF THE TRUSTEES.

To His Excellency the Governor of the Commonwealth and to the Honorable Council.

The trustees of the Massachusetts State Sanatorium respectfully submit this their fifth annual report.

Early in the year the State Board of Charity, acting under directions of chapter 98, Resolves of 1900, met with the trustees, and after a most thorough exchange of views on the question of building a new sanatorium, decided the wiser course would be to enlarge the present institution to accommodate 250 patients, an increase of 75 to 80 over the present number, and to more completely equip it for carrying on its work. The suggestions for such enlargement and equipment were fully outlined in the trustees' report of 1900.

At the beginning of the legislative session of 1901 this Board petitioned that honorable body for an appropriation of \$110,000 to carry out the recommendations of the State Board of Charity. The petition was considered favorably and the full amount appropriated. This Board at once ordered plans and specifications made for an administration building, a dining hall and kitchen, recreation hall, lengthening of short wards and making them two stories in height, additional bath rooms in each ward, together with all necessary heating, ventilating, plumbing, lighting, etc.

The architects to whom this work was intrusted were Messrs. Kendall, Taylor & Stevens of Boston. The contracts have all been let, and the work of erecting the build-

ings is progressing fairly satisfactorily. It is hoped that by May of next year all the work will be completed and the building ready for occupancy.

The sanatorium has had its full quota of patients during the year, and from a perusal of the report of the treasurer it will be seen that the cost per patient has not been materially reduced over the previous year. This expense seems large, but how to reduce it is a problem that the trustees have not as yet been able to solve.

The matter of free patients is a very important factor in the expenses of the institution. The utmost care is taken to investigate thoroughly all cases where application is made for free treatment, admitting, in a few instances only, such cases as are very hopeful in the opinion of the examining physicians. There are, however, not a few patients whose cases are progressing favorably and who pay as long as they or their friends have anything to pay with. To dismiss such patients during the progressive stage in their recovery to health would defeat the object for which the sanatorium was created, and yet it is an item of expense that increases very materially the per capita cost.

It is to be expected that the greater number of patients to be provided for by the additions to the sanatorium will materially reduce the per capita expense.

The expense per patient during the year was \$9.47 per week, a reduction of $27\frac{1}{2}$ cents per week from the cost in 1900, or a saving of \$2,400 for the year. It is, however, manifest that in an institution of this kind a much higher cost for maintenance per patient than the expense in other State institutions is inevitable.

The farm experiment bids fair to be a factor in reducing this expense. In the judgment of the trustees more land could be worked with advantage to the sanatorium and profit to the State, and they would advise and urge the purchase of 50 to 75 acres more of tillage land, and the erection of suitable farm buildings. We would recommend an appropriation of \$12,000 for this purpose. By a perusal of the report of the superintendent it will be seen that the patients have been doing light work on the grounds, such as cleaning up brush, picking up stones, etc. Aside from being a bene-

fit to the patients thus employed the work will eventually manifest itself in the improvement of the grounds.

As suggested in our report of last year a moderate expenditure of money each year in landscape architecture would in the course of a few years add very much to the attractiveness of the grounds surrounding the institution. The trustees would respectfully recommend an appropriation of \$2,000 for the above purpose, and \$1,000 for repair of roads.

The question has been before the Legislature, and freely discussed, as to the advisability of building another sanatorium for consumptives. It is the opinion of the medical experts that if the present institution confines its work to incipient cases it will meet all demands for some years to come.

There seems to be an impression among physicians in different parts of the State that patients can be admitted in the advanced stage of the disease. As the policy of the sanatorium has been to admit only incipient cases, the time of the examining physicians will be saved as well as expense to applicants for admission if they will be governed by this fact.

The appropriation of \$60,000 for maintenance the current year will all be needed, and with the probable addition of 80 more patients for six months the trustees would recommend an appropriation of \$75,000 for maintenance for the ensuing year.

Respectfully submitted,

WELLINGTON E. PARKHURST.

FRED. B. PERCY.

ALBERT C. GETCHELL.

JOHN C. HAMMOND.

A. W. ESLEECK.

REPORT OF SUPERINTENDENT AND TREASURER.

To the Trustees of the Massachusetts State Sanatorium.

I submit herewith my report as superintendent and treasurer of this institution for the year ending Sept. 30, 1901.

The following tables are self-explanatory:—

Admissions and Discharges.

PATIENTS.	Male.	Female.	Total.
Number of patients in the sanatorium Sept. 30, 1900,	82	94	176
Number admitted within the year,	193	206	399
Number discharged within the year,	199	203	402
Number of deaths,	—	1	1
Patients remaining in the sanatorium Sept. 30, 1901,	80	92	172
Daily average number of patients,	79	89	168

Residence of Patients admitted during the Year.

COUNTIES.	Patients.	COUNTIES.	Patients.
Suffolk,	143	Bristol,	14
Middlesex,	102	Plymouth,	9
Worcester,	46	Berkshire,	2
Essex,	34	Hampshire,	2
Norfolk,	28	Barnstable,	1
Hampden,	18		

Civil Condition.

	Male.	Female.	Total.
Unmarried,	117	124	241
Married,	77	71	148
Widowed,	5	5	10

Occupations.

	Male.	Female.		Male.	Female.
Baker,	1	—	Fireman,	1	—
Barber,	2	—	Gardener,	1	—
Blacksmith,	2	—	Hostler,	2	—
Boiler inspector,	1	—	Housewife,	—	70
Book-keeper,	9	9	Ice-cream maker,	1	—
Box maker,	1	—	Illustrator,	1	—
Brakeman,	1	—	Jeweller,	3	—
Builder,	2	—	Laborer,	4	—
Carpenter,	6	—	Janitor,	2	—
Cigar maker,	4	—	Lawyer,	1	—
Clerk,	25	10	Machinist,	10	—
Coachman,	3	—	Metal worker,	1	—
Conductor, electric railway,	3	—	Milliner,	—	1
Cook,	2	2	Musician,	1	2
Domestic,	—	32	Nurse maid,	—	1
Draftsman,	2	—	Nurse, student,	—	1
Dressmaker,	—	5	None,	1	15
Electrician,	2	—	Painter,	1	—
Elevator man,	1	—	Physician,	2	2
Engineer,	1	—	Plumber,	6	—
Engraver,	3	—	Printer,	5	—
Factory and mill operative,	36	26	Reporter,	3	—
Farmer,	1	—	Salespeople,	5	6
			Seamstress,	—	4
			Shipper,	1	—

Occupations — Concluded.

	Male.	Female.		Male.	Female.
Silversmith, . . .	1	-	Typesetter, . . .	-	1
Steamfitter, . . .	1	-	Upholsterer, . . .	2	-
Stenographer, . . .	3	4	Waiter, . . .	3	4
Student,	8	7	Watchmaker, . . .	1	-
Tailor,	1	1	Watchman, night, .	1	-
Teacher,	-	3	Wheelwright, . . .	1	-
Teamster,	6	-	Wool sorter, . . .	1	-
Travelling salesman,	4	-			

The Boston office of the sanatorium at 181 Tremont Street has been open throughout the year for examination of applicants on Wednesdays and Saturdays, from ten to twelve o'clock. Examinations of applicants have been made at the sanatorium on the regular days, Monday and Friday. There have appeared for examination at both places 1,100 applicants. Of the 399 patients admitted the average age is twenty-eight years.

The gardening, which we considered somewhat of an experiment last year, has this year assumed larger proportions and has been a success in every way. On the farm we have fenced a pasture for cows purchased this year, and are now supplying 60 quarts of milk daily. We believe these and other farming interests should be further developed.

We began during the summer to employ the men patients under supervision for a regular time daily on the grounds, caring for the roads, clearing the woodland, etc. This work has been of benefit physically to the patients. We hope in this way to beautify the grounds.

I wish here to acknowledge the receipt and to thank the donors of the card catalogue, the various newspapers and magazines sent to our library; also the wraps for patients. Warm wraps are always much appreciated, as we usually have some patient who is not prepared for the severity of the out-of-door life in winter.

Our thanks are also due the clergymen who have conducted services for us, friends who have provided entertainment, and others who have encouraged and helped.

With the exception of a little work kindly done by the Harvard Medical School and the Boston University School of Medicine all the microscopical work of the year has been done at the sanatorium.

The expenditures from the special appropriations, also the expenses for the year, are shown in the following statements:—

Cash on hand Oct. 1, 1900,	\$381 89
Balance appropriation, 1900, for maintenance,	15,095 02
Received from Commonwealth, portion of appropriation for maintenance, 1901,	35,108 36
Received from patients for board and treatment,	27,414 81
Received from cities and towns for support of patients,	993 58
Received from the State and from charitable associations for support of patients,	1,673 74
Received from sale of clinical thermometers, furs, etc.,	1,834 57
	<hr/>
	\$82,501 97

The expenses for the year ending Sept. 30, 1901, have been as follows:—

Salaries and wages,	\$29,325 00
Provisions and supplies:—	
Fresh meat,	\$12,401 27
Ham and bacon,	504 80
Flour,	649 75
Butter,	3,540 83
Eggs,	3,451 98
Milk,	6,056 02
Groceries,	4,391 79
Fruit and vegetables,	1,342 17
Fresh fish,	594 85
	<hr/>
	32,933 46
Water,	\$1,000 00
Fuel and light,	8,159 49
Medical supplies,	863 60
Supplies for cuspidors,	929 05
Household supplies and expenses,	3,062 91
Engineer's supplies,	143 85
	<hr/>
<i>Amounts carried forward,</i>	\$14,158 90 \$62,258 46

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<i>Amounts brought forward,</i>	\$14,158 90	\$62,258 46
Office supplies,	793 99	
Boston office, rent and attendance,	542 65	
Farm supplies,	930 97	
Grain and feed for stock,	846 29	
Farm repairs,	95 48	
Teaming and livery,	398 98	
Travelling expenses (trustees, visiting physicians and other officers),	1,647 49	
Freight,	473 15	
Express,	334 06	
Telephone,	389 54	
Telegraph,	10 72	
General repairs,	850 03	
	<hr/>	
	\$21,472 25	
Of which there remain unpaid bills amounting to	<hr/>	
	9,054 66	
	<hr/>	
Total,		\$74,676 05

<i>Extraordinary expense:—</i>		
Furs for patients,	\$310 15	
Clinical thermometers, furs, etc.,	1,086 34	
Household furnishings,	17 55	
Other miscellaneous,	457 66	
Total,	<hr/>	\$1,871 70
Rebate to patients,		271 37
<i>Liabilities as of fourth annual report, and paid this year:—</i>		
Portion of water rent, 1900,	250 00	
Miscellaneous bills,	4,103 62	
Total extraordinary expense,	<hr/>	\$6,496 69
Cash on hand Sept. 30, 1901,		1,329 23
	<hr/>	
		\$82,501 97

RESOURCES.		
Cash on hand Sept. 30, 1901,		\$1,329 23
Due from patients,		912 07
Due from cities and towns for support of patients,		675 89
Due from State and charitable associations for support of patients,		50 85
Balance of appropriation, 1901, for maintenance,		24,891 64
Supplies on hand Sept. 30, 1901,		2,773 35
Estimated income from patients to Dec. 31, 1901,		7,500 00

LIABILITIES.		
Due for supplies, salaries and wages,		\$9,054 66

SUMMARY OF CURRENT EXPENSES FOR THE YEAR ENDING SEPT. 30, 1901.

Total expenditures for current expenses, . . .	\$74,676 05
Liabilities for current expenses, . . .	9,054 66

	\$83,730 71
Supplies on hand Sept. 30, 1901, . . .	\$2,773 35
Supplies on hand Oct. 1, 1900, . . .	1,974 60
Making a deduction of, . . .	798 75

We have as total current expenses, . . .	\$82,931 96

Dividing this amount by the total number of days for patients, 61,297, we have \$1.3529+ as the average cost per day, or \$9.47 per week.

SPECIAL APPROPRIATION, 1898, — GRADING.

Unexpended balance, as of fourth annual report, . . .	\$30 65
October, 1900, schedule of bills, . . .	30 65

SPECIAL APPROPRIATION, 1900, — FURNISHING, GRADING, PAINTING, EXTENSION OF WATER PIPES, AND SUNDRY OTHER NECESSARY IMPROVEMENTS.

Balance of appropriation, as of fourth annual report, . . .	\$1,175 85
October, 1900, schedule of bills, . . .	\$905 49
January, 1901, schedule of bills, . . .	270 36

	1,175 85

SPECIAL APPROPRIATION, 1900, — NEW DINING ROOM AND ASSEMBLY HALL.

Appropriation, 1900, . . .	\$18,000 00
Oct. 1, 1900, schedule of bills, . . .	625 00

Unexpended balance, . . .	\$17,375 00

SPECIAL APPROPRIATION, 1901, — ENLARGEMENT OF BUILDINGS.

Appropriation, 1901, . . .	\$110,000 00
June 1, 1901, schedule of bills, . . .	\$387 12
July 19, 1901, schedule of bills, . . .	758 10
July 26, 1901, schedule of bills, . . .	2,178 84
Aug. 28, 1901, schedule of bills, . . .	853 52
Sept. 14, 1901, schedule of bills, . . .	7,000 00

	11,177 58

Unexpended balance, . . .	\$98,822 42
Unexpended balance, \$18,000 appropriation, . . .	17,375 00

Amount available Sept. 30, 1901, for new buildings, etc., \$116,197 42

In concluding my report I thank your Board for your continued helpful counsel.

Respectfully,

WALTER J. MARCLEY.

RUTLAND, MASS., Oct. 17, 1901.

I have examined the accounts of the treasurer of the Massachusetts State Sanatorium and have found them correct.

(Signed) C. E. WATSON,
Expert Accountant.

REPORT OF THE EXAMINING AND VISITING PHYSICIANS.

SEPT. 30, 1901.

To the Trustees of the Massachusetts State Sanatorium.

GENTLEMEN:—It gives me great pleasure to be able to make such a gratifying report as the following of the third year of my service at the State Sanatorium, showing, as it does, better results than were obtained in either of my other years.

Whereas in the first year 64 per cent. and in the second year $64\frac{1}{2}$ per cent. of all grades of incipient cases were apparently cured or arrested, in the third year this percentage became about 67; and if only the best grade of incipient cases should be counted, the percentage would be still higher.

Also, whereas in the first year 37 per cent. and in the second year 45 per cent. of all the cases of the disease in all its stages, including incipient, moderately advanced and far advanced, were apparently cured or arrested, in the third year this percentage rose to about 50.

The number of patients in my service one year ago was	76
The number admitted during the year was	169
The number treated during the year was	245
The number discharged during the year was	167
The number of patients now in my service, Sept. 30, 1901, is	78

Of the discharged patients, 82 were men and 85 were women. Of these 167, 20 remained in the sanatorium less than one month, which was manifestly too short a time to entitle them to consideration in a statistical report. Deducting these we have 147 patients who remained more than one month.

CONDITION ON ADMISSION.	Apparently Cured or Arrested	Improved.	Not Improved.	Died.
Incipient cases (92),*	62	25	5	-
Moderately advanced cases (52),	12	34	5	1
Far advanced cases (3),	-	2	1	-
Total (147),	74	61	11	1

* The definitions of terms used are the same as in my former reports.

From this table can be obtained the following percentages:—

Of the incipient cases there were—

	Per Cent.
Apparently cured or arrested,	67+
Improved (including also greatly improved),	27+
Not improved (including worse),	5+

Of the moderately advanced cases there were—

Apparently cured or arrested,	23+
Improved (including also greatly improved),	65+
Not improved (including worse),	10—
Died,	2—

Of the far advanced cases there were—

Improved,	67—
Not improved (worse),	33+

Of all the considered cases in my service there were—

Apparently cured or arrested,	50+
Improved (including much improved),	41½
Not improved (including worse),	7+
Died,	½+

The average stay of the 147 cases was $6\frac{1}{2}$ months.

The number of those who stayed more than one year was 16

Of the 147 cases those who gained in weight numbered 143

The average gain in weight of these was $13\frac{2}{3}$ pounds.

The largest gain in weight of these was $41\frac{1}{2}$ pounds.

Of the 147 cases those who lost in weight numbered 4

The average loss in weight of these 4 was $6\frac{1}{2}$ pounds.

The patient who died was a woman forty years of age, who had been decidedly improving in general condition,

but who died very suddenly in the night from a copious hemorrhage.

Tubercle bacilli were found in the sputum of 117 of the 147 cases, and were not found in 30, although in some of these latter cases probably a more extended search in repeated examinations would have disclosed them. Indeed, in one case they were found only in the eleventh specimen and then quite abundantly. Not as many examinations of the sputum have been made this year as formerly. Of these 30 cases, 14 had no sputum to examine, and of these 14, 6 had had hemorrhages, one cervical adenitis, and all but 2 had had positive physical signs. Of the remaining 16, 10 had had hemorrhages; and in all the clinical picture, including physical signs, was undoubted.

Letters of inquiry as to the present condition of patients discharged as apparently cured during the first and second years have been recently sent out. No letters were sent to those discharged during the third year, as the time elapsed since their discharge has been comparatively short. The letters contained printed questions about symptoms, and answers to these questions were desired. A large majority responded, a few did not, and some were evidently not reached on account of change of address, as their letters were returned by the postal authorities unopened.

Some of these former patients also appeared for a physical examination, and others who did not answer were heard from indirectly. On account of the incompleteness of the reports no exact statistical tables can be prepared, but it is safe to say that almost all of these graduates have "held the fort" remarkably well, in spite of the fact that quite a number of them have been obliged to return to their old occupations and surroundings, in which the disease was developed. A great effort has been made not only to teach patients while in the sanatorium how to live hygienically, but also at the time of their discharge to impress upon them as forcibly as possible the urgent necessity for a continuance of the healthy life, so far as in them lies. If an occasional symptom of their former invalidism has reappeared in a few cases, it has, as a rule, been only temporary, and the great majority have been restored to lives of active usefulness.

A few have failed, as was to be expected, but only one of the entire number (88), as far as can be learned, has died.

It is interesting to note that in the three years during which our State Sanatorium has been in operation practically *no alcohol* whatever has been used in the treatment of patients, and yet our success has been phenomenal. For a long time, until within a few years, the almost universal custom has been (as it is now with some physicians) to give it, often in large doses, to every consumptive as a routine measure, and the doctor who withheld it was looked upon as culpably negligent. The late Dr. Austin Flint of New York, one of the most illustrious authorities in this disease that America has ever produced, often recommended it to be taken continuously, in the form of whiskey, in varying doses up to a pint in twenty-four hours, and comparatively few physicians disagreed with him as to the wisdom of such a course.

Of late years, however, the opinion has been fast gaining ground with many that such treatment is unwise and prejudicial, and that greater success can be obtained without it. Indeed, it is now believed by many eminent phthisiologists that, instead of exercising any antagonistic influence, alcohol is one of the most common and powerful causes of the disease. At the recent British Congress of Tuberculosis, with expert representatives present from the whole world, the eminent Professor Brouardel of Paris in his paper claimed that "alcoholism is the most potent factor in propagating tuberculosis." Surely our experience at Rutland, in this bleak New England climate, has proved at least that alcohol is not a necessity in the successful treatment of consumption. Some of our patients have taken a few drops of wine with their raw eggs, to correct the flat taste, but the amount of alcohol thus used has been too small to do either harm or good.

Our experience at Rutland for three years would also seem to show that cod liver oil is not, as many practically believe, an indispensable agent in the successful treatment of phthisis. Only a small percentage of our patients (perhaps 5 per cent.) have had any at all, and these not continuously. Its use has been restricted to those cases in which

little or no weight was gained under the ordinary sanatorium diet, and in these, as a rule, it did not seem to produce any remarkable effects.

On the first of January, 1901, my assistant physician, Dr. D. P. Butler, Jr., resigned the position in which he had given such general satisfaction for two years and three months, in order to enter private practice.

We were fortunate in securing as his successor Dr. George N. Lapham, a man of ability and education, who has since very faithfully performed the duties assigned to him.

Respectfully submitted,

HERBERT C. CLAPP, M.D.

Oct. 1, 1901.

To the Trustees of the State Sanatorium.

GENTLEMEN:—I have the honor of presenting to you the results obtained in my service from Oct. 1, 1900, to Oct. 1, 1901.

With the present capacity of the sanatorium there are on an average 95 patients continually under treatment in my department.

The number of patients discharged during the year is	235
The number who remained less than one month and whose cases are not considered in the report is	34
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The number taken into consideration in the report is	201
Of these, 3 had been readmitted.	

It should be stated here that of the 34 cases which are not considered only 2 were unfavorable cases; the other 32 were promising cases, but for a variety of reasons were obliged to leave the institution before the full effect of a stay at Rutland could be fairly judged. Several, after short observation, were thought to be non-tuberculous and were therefore discharged.

Number of women under treatment,	99
Number of men under treatment,	102
Average age,	28 years.
The average length of stay was	6 months.

Of the 201 cases, 85, or 42.23 per cent., left with the disease "arrested." In the use of this term I have adhered to the same method which I have always employed hitherto in classifying these cases. The term is applied to the cases in which cough, expectoration, bacilli and fever have disappeared, and where the appearance and general condition have been one of health. The term "cured" or "apparently cured" I do not use until, after the lapse of one or two years, the patient shows no symptoms of relapse.

The greatest care has been used not to apply the term "arrested" to any case except under the conditions above mentioned, although many cases have been classed as "very much improved" when their condition would perhaps warrant a more favorable term.

Of the entire number discharged only 8, or 3.98 per cent., were "not improved." Of the purely "incipient" cases (*i.e.*, not including "well-marked incipient" cases referred to in the table which follows), 35 out of 44 were "arrested," or 79+ per cent.

The following table will show concisely both the condition of the patients upon entrance and the result of the treatment:—

Table of Results.

	Incipient.	Well-marked Incipient.	Moderately Advanced.	Advanced (Each having fair-sized cavity).	Totals.	Per-centages.
Arrested, . . .	35 (9)	35 (10)	12 (8)	3 (3)	85	42.2+
Very much improved,	5	23 (10)	13 (7)	4 (3)	45	22.3+
Much improved, . .	1 (1)	10 (10)	19 (15)	1	31	15.4+
Improved, . . .	3 (1)	10 (10)	16 (13)	3 (3)	32	15.9+
Not improved, . .	0	2 (2)	3 (3)	3 (3)	8	3.9+
Totals, . . .	44	80	63	14	201	-
Percentages, . .	22	40	31	7	-	-

NOTE.—The figures in parentheses denote those having symptoms indicating an active process, *i.e.*, fever, high pulse, etc.

There were no deaths this year.

The term "incipient" is used in those cases in which the physical signs are confined to small areas, namely, in one or both apices of the lungs.

The term "well-marked incipient" is used where larger areas are involved, the physical signs being more defined.

The term "moderately advanced" refers to large areas with signs of disease very marked (dulness, bubbling rales and bronchial respiration), in fact, any degree of physical signs between that just indicated as "well-marked incipient" and the last stage, which is indicated by the term "advanced," and which means that well-marked cavity formation is present.

All of the above stages have more or less constitutional disturbance, which is indicated, as far as possible, by figures in parentheses on the table, denoting the number having fever, rapid pulse, etc., for some time.

A careful perusal of these tables will show that although the sanatorium is intended really for the reception of *incipient* cases with slight signs only, a large number in whom the disease was well-marked and even advanced have been received when there was a prospect of improvement. The results in the latter have often been most surprising and gratifying.

The average duration of symptoms of disease prior to entrance in all cases was 15.7 months.

This is a very conservative estimate, which will prove that the cases treated at Rutland are not confined to the *incipient* class.

Hæmoptysis had occurred in	100 cases.
Bacilli of tuberculosis were found in	158 cases.
Tuberculin reaction was positive in	17 cases.
There was sufficient evidence of pulmonary disease (hæmoptysis, abnormal physical signs in the chest, etc.), without the necessity of using tuberculin, in	26 cases.

Total, 201 .

	Months.	Days.
Of the "arrested" cases the longest stay was	14	7
Of the "arrested" cases the average stay was	5	12
Of the "arrested" cases the shortest stay was	1	8
Of the "very much improved" cases the longest stay was	22	22
Of the "much improved" cases the longest stay was	16	—

	Pounds.
Average gain in weight of all cases,	14.2
Average gain in weight of "arrested" cases,	14.3
Average gain in weight of all grades of "improved" cases,	13.9
Average gain in weight of all cases (201),	14.2
Greatest gain in weight of "arrested" cases,	36
Greatest gain in weight of "very much improved" cases,	32½
Greatest gain in weight of "much improved" cases,	28
Greatest gain in weight of "improved" cases,	21½
Greatest gain in weight of "not improved" cases,	2½

Comparison of Percentages in the First, Second and Third Years.

	1898-99.	1899-1900.	1900-1901.
Number of "arrested" cases,	30.97	39.7	42.23
Number of all classes of "improved" cases,	46.10	52.4	53.79
Number of "not improved" cases,	21.23	7.9	3.98

It will thus be seen that there has been a steady improvement in the results obtained thus far at the sanatorium.

This is doubtless due to increased facilities for work and larger experience. It also illustrates the great importance of having in the hospital a corps of medical assistants whose medical knowledge, judgment and devotion to their work can be absolutely relied upon. Speaking for my own department from personal knowledge, I am glad to state that thus far we have been particularly fortunate. No one can possibly judge as well as the attending physicians how much the welfare of the institution depends upon this factor.

**SUBSEQUENT HISTORIES OF FORMER PATIENTS, DISCHARGED
FROM TWO TO TWO AND ONE-HALF YEARS AGO.**

I quote the returns as prepared by my assistant, Dr. Dunham.

"Of the 35 cases tabulated as 'arrested' at the time of discharge during the year 1898-99, all are believed to be alive and in good condition with the exception of 2, who died this year after a residence of nearly two years on the coast. The circumstances involving the relapse and death make the result in each case anything but surprising. The following is the subsequent history of one of these cases: female, age 24, discharged in September, 1899. She returned to her home in the thickly settled portion of Boston. Her health remained good for one year. During this time she married

and moved to a cheap tenement to live. A child was born, which she nursed for a short time and then the old symptoms reappeared. Instead of taking a necessary rest she continued with the housework and took care of a sick parent. She could not afford to hire assistance nor take the treatment which first had proved so beneficial. Death occurred one year and eight months after discharge.

Of the 33 remaining cases, 26 are known to be well and have been at work since discharge. We have personally examined many of these cases recently.

Seven of the cases have received our latest circulars of inquiry (September, 1901), but as yet have not taken the time to reply.

The 7 patients discharged as 'improved,' and in whom the disease subsequently became 'arrested' (see report Sept. 30, 1900), are still in the same excellent condition of 'arrest.'

CASES FROM THE YEAR PRIOR TO SEPT. 30, 1900, DISCHARGED FROM ONE TO TWO YEARS AGO.

Of the 56 cases tabulated as 'arrested' at the time of discharge during the year 1899-1900, all are alive and in good condition with the exception of 4, who have relapsed. Two weeks after the date of this report it is known that one of these relapsed cases has died. Eleven months were spent in the west without checking the disease, the fatal termination being due to an unwise attempt at work.

At least 3 of the cases classified under the head of improvement at the time of discharge have since lost every symptom of the disease and are now considered as 'arrested.' All of these cases are called upon to answer a list of questions, which are very searching in their bearing upon the physical condition. Many of the cases were so situated that we were able to make a personal physical examination. Three of the 'arrested' cases, whom we have every reason to believe to be in good condition, as stated, have not, as yet, replied to our circulars. Fifty out of these 56 patients are known to have been engaged in employments as arduous, although as a rule more healthful, than those in which they were engaged before their illness."

NEEDS OF THE SANATORIUM.

The physicians regard with the greatest satisfaction the appropriation of money to give them increased facilities for their work. The following suggestions are made after deliberate thought and observation of the needs of the institution:—

With the increased number of patients, when the new wards are opened, the presence of a trained medical assistant for the assistant physician is essential. His duties should be to take the histories of all patients applying for admission to the sanatorium, a work which now necessarily devolves upon some one untrained for this purpose, with the consequent inevitable annoying inaccuracies of statement which have to be rectified later. He should attend to all medical duties which are detailed to him by the assistant physician, both at the sanatorium or possibly at the examining office in Boston, and should be able to act as deputy for the assistant physician in the event of the latter's illness or absence. His term of service should last at least six months, better still, a year, and a salary should be offered.

In addition to this a medical student should be employed to assist in the laboratory, by which more thorough work than is now possible can be done. Such a student could no doubt be found in the Boston medical schools, and could act for both departments in the sanatorium. His term of service should be from two to three months, without salary.

The present arrangements in this department are quite inadequate for an institution of the nature and scope of the Rutland Sanatorium.

We have accomplished excellent work thus far, but a change is necessary in order not only to meet the greater demands upon the physicians but to place the sanatorium upon a still higher plane.

In regard to the examining office in Boston, the ever-increasing number of applicants demand more commodious and, if possible, less noisy quarters. Applicants are now often obliged to stand far out into the corridor; the air in the rooms is often stifling and most oppressive for both physicians and patients. Former patients of the sanatorium,

moreover, are continually returning to the office to report their condition. As time goes by this number will naturally increase. As the subsequent histories of former patients are of vital interest to the institution, it is essential that proper facilities should be offered to encourage this action on their part. It is now practically impossible for the physicians to meet this condition satisfactorily.

When the new administration building is finished, or before that time if possible, the physicians trust that a clerk may be employed by the superintendent whose *first* duty shall be to attend to all filing, indexing or typewriting of medical records, so that they may be accessible at a moment's notice. He should also be deputed to follow up the histories of discharged patients by sending circulars at stated intervals, with requests for replies, and answers to be properly filed. Up to the present time we have been working under great disadvantages in this special direction.

In connection with the new laboratory a room arranged for examinations with a proper X-ray machine is an improvement greatly to be desired. A room also for the use of inhalations is a necessary accompaniment of any institution of this nature.

As in the report of last year, I wish to emphasize the importance of having some arrangement by which a small "probation hospital" or "reception cottage" can be placed near the sanatorium, where a certain number of applicants can enter for trial to see if improvement or otherwise takes place during their tentative stay in Rutland. From this building cases can be selected for admission to the sanatorium as soon as a vacancy occurs, and not only will this obviate delays in filling the empty beds but the candidates for admission will be saving valuable time which otherwise will probably be spent, to their disadvantage, in their homes, pending the time of their admission.

It has been a great source of satisfaction during the past year to note the ever-increasing interest in the medical profession over the work in Rutland. We have been honored by visits of deputations of students from the medical schools as well as from members of the profession. The enthusiasm expressed has been as helpful as it was apparently heartfelt.

Constant proofs, moreover, are being shown of the great value of the sanatorium as an educational centre for the community. As has been often said, it helps not only the individual but the community at large to see that fresh air, good food and judicious exercise are required not only for the cure of pulmonary disease but that they are the chief factors in prevention of diseases which arise from lack of these essentials.

In closing my report I wish to again gratefully acknowledge the invaluable services of my assistant, Dr. Henry B. Dunham, and to express my appreciation of the ever kind co-operation of Dr. Marcley, Miss Thrasher, their assistants and the nurses.

I remain, gentlemen, respectfully yours,

VINCENT Y. BOWDITCH.

LIST OF WAGES.

Examining and visiting physicians (per annum), each,	\$2,500 00
Superintendent and treasurer (per annum),	2,000 00
Matron and superintendent of nurses (per annum),	1,000 00
Assistant physicians (per annum),	600 00
Chief engineer, with meals (per annum),	1,200 00
Supervisor, without living (per annum),	800 00
Book-keeper (per annum),	600 00
Assistant matron (per month),	35 00
Nurses, day (per month),	30 00
Nurses, night (per month),	35 00
Stenographer (per month),	30 00
Clerk (per month),	15 00
Assistant engineer, without living (per month),	60 00
Assistant engineer, without living (per month), for six months,	45 00
Cook (per month),	80 00
Assistant cook (per month),	38 50
Baker (per month),	60 00
Baker's assistant (per month),	25 00
Fireman (per month),	40 00
Fireman (per month), for nine months,	40 00
Fireman (per month), for three months,	10 00
Carpenter, without living (per day),	2 25
Head laundress (per month),	25 00
Laundry help, female (per month),	\$15 00 to 20 00
Laundry help, male (per month),	20 00
Ward help, female (per month),	\$13 00 to 15 00
Ward help, male (per month),	15 00
General work (per month),	15 00
Porter and messenger (per month),	25 00
Kitchen men (per month),	\$15 00 to 25 00
Coachman (per month),	20 00
Teamster (per month),	20 00
Farm help (per month),	\$15 00 to 22 50

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